

Work Order ID 81111

81111

Page 1

March-08-12 8:51:08 AM

Item ID: D3391-025
Revision ID:
Item Name: Aft Tube Assembly

Accept

N900040100

Setup Start ***NS1***
Stop ***NS2***

Start Date: 08/03/2012 Start Qty: 1.00 ***1***
Required Date: 22/03/2012 Req'd Qty: 1.00 ***1***

Cust Item ID:
Customer:

Reference:

Approvals: Process Plan: MLJ Date: 12/03/09 Tooling: Date:
QC: Date: SPC (Y/N): Date:

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D3391	I

100 0.00

100

MORI SEIKI CNC LATHE LARGE

Mori Seiki Memo 0.00
Mori Seiki CNC Lathe Large Turn as per Folio FA599 Rev: A & Dwg D3391 Rev: I

scribe batch # on fwd end at 90 degree

110 QC2- Inspect parts off machine FAI/FAIB 0.00

110

QC Memo 0.00
Quality Control

111 QC8- Inspect parts - second check 0.00

111

QC Memo 0.00
Quality Control ***INSPECT INSIDE BORE***

1 Ø
MM.L 12/03/19
1 Ø
MM.L 12/03/19
1 Ø 12/03/19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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 Start Date: 08/03/2012 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 22/03/2012 Req'd Qty: 1.00 ***1*** Customer:
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Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120		0.00							
120	HAAS CNC VERTICAL MACHINING #1								
HAAS I	Memo	0.00							
HAAS CNC vertical machine #1	1-Machine as per Folio FA 599 Rev: <u>A</u> & Dwg D3391 Rev: <u>I</u> 2-Debur								
130		0.00							
130	QC2- Inspect parts off machine FAI/FAIB								
QC	Memo	0.00							
Quality Control									
140		0.00							
140	QC8- Inspect parts - second check								
QC	Memo	0.00							
Quality Control	***INSPECT INSIDE BORE***								

[Handwritten signatures and dates]
 12/03/14
 12/03/14
 12/03/14
 12/03/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Page 3

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Stop ***NR2***

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--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150

0.00

150

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Drill (PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

CF 12-3-27

160

0.00

160

BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

Form as per Dwg D3391 Using Bend Prog 3391025

Re 12/03/27

170

QC5- Inspect part completeness to step on W/O

0.00

170

QC

Memo

0.00

Quality Control

4.08"

DP 12-3-27

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Page 4

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

0.00

180

Skidtubes

0.00

Skidtubes

Memo

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill float bag holes using DT8809 as per Dwg D3391(Holes marked "A" Only.

3-Drill wearplate holes as per Dwg D3391 using DT8878(Mid Tube) & DT8217
Wearplate Jig

*****Do Not Open To Finished Size*****

4-Drill Wearshoe holes as per DWG D3391 using DT8939 locating from 2
previously drilled aft wearplate holes.

5-Open wearplate holes to 0.250" and c'bore as per dwg D3391

6-Open up all wearshoe , wearplate to 0.297"and float bag holes to 0.328" as per
Dwg D3391.

7-Deburr

DC 12/04/09

DC 12/04/10

DC 12/04/10

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Page 5

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

QC5- Inspect part completeness to step on W/O

0.00

190

QC

Memo

0.00

Quality Control

Siz 64/11

200

Chemical Conversion Coat per QSI005 4.1

0.00

200

HandFinish

Memo

0.00

Hand Finishing

HG 12-4-11

210

QC3- Inspect Part Finish

0.00

210

QC

Memo

0.00

Quality Control

DP 12-4-11

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Page 7

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Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
240 Powdercoat Powder Coating m121134	Memo START TIME: 8:40 OVEN TEMPERATURE: 3200F FINISH TIME: 9:10	0.00				1X	✓		m12/04/17
250	QC3- Inspect Part Finish	0.00							
250 QC Quality Control	Memo	0.00				1X	✓		u12/04/18
260	HandFinishing	0.00							
260 HandFinish Hand Finishing	Memo ✓ 1-Install inserts as per Dwg D3391 ✓ 2-Install Aft Cap as per Dwg D3391 A/R Sikaflex-241/-291 11121771 Sikaflex expiry date: 13/01	0.00				1X	✓		u12/04/18
	✓ 3- INSTALL WEARPLATES AS PER DWG								

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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March-08-12 8:51:08 AM

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Page 8

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270 *270* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00		8/26/12					
280 *280* Packaging Packaging	Identify as per dwg & Stock Location: <u>w/o</u> Memo	0.00 0.00		D412-742-043/B79961				1x d 4 11/6/12	
290 *290* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00						12/4/19 JF MF 12-04-18	

W/O:		WORK ORDER CHANGES					
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Picklist Print

March-08-12 8:51:12 AM

Page 1

Work Order ID: 81111

81111

Parent Item: D3391-025

D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 08/03/2012

Required Date: 22/03/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev B 06-02-07 ECN773 dwg rev. D EC
IPP Rev:C 06-03-28 Update Manuf. Instructions JLM
IPP rev D 07.03.20 revF dwg EC
IPP rev E 07.11.07 rev G dwg ecn 1053p EC verified by: DD
IPP Rev:F 07-11-13 ECN 1056 DD verified by: EC
IPP Rev:G 08-09-10 revH as per dwg DD verified by:EC IPP Rev:H
11.11.14 AS PER REV.I DD verified by:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4095-047		Manufactured	No			260	Each	19.0000	1	1			

D4095-047

Wearpad Assembly

**

u nloc 1/15

Location	Loc Qty	Loc Code
FP002	19	
78325	5	
80703	14	

D4095-049

Manufactured No

260 Each 15.0000

1

1

D4095-049

Wearpad Assembly

**

u nloc 1/15

Location	Loc Qty	Loc Code
FP002	15	
80704	15	

D6014-090

Manufactured No

100 Each 43.0000

1

1

D6014-090

ALUMINUM EXTRUSION

**

Location	Loc Qty	Loc Code
LG	43	
77332	43	

1 mgm. 12/03/15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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March-08-12 8:51:12 AM

Page 2

Work Order ID: 81111

81111

Parent Item: D3391-025

D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 08/03/2012

Required Date: 22/03/2012

Start Qty: 1.00

Required Qty: 1.00

D3670-4-200

Manufactured No

230

Each

63.0000

4

4

D3670-4-200

SPACER

**

12/04/11

Location

Loc Qty

Loc Code

LG001

63

72851

3

77500

4

78606

56

D2646

Manufactured No

270

Each

146.0000

1

1

D2646

Aft Cap

**

12/04/11

Location

Loc Qty

Loc Code

FP002

146

62678

5

68280

5

70945

1

71070

2

73294

1

73825

2

78018

33

79500

47

79562

50

D3672-1

Manufactured No

270

Each

1,294.000

2

2

D3672-1

Phenolic Washer

**

12/04/11

Location

Loc Qty

Loc Code

FP001

242

66821

242

ST060

1052

72229

52

76277

500

80369

500

March-08-12 8:51:13 AM

Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
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March-08-12 8:51:13 AM

Page 3

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Parent Item: D3391-025

D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 08/03/2012

Required Date: 22/03/2012

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-130

Purchased

No

260

Each

4,855.000

14

14

AI S4-1032-130

**

W 12/05/18

Insert

Location

Loc Qty

Loc Code

ST280

681

119084

116

120671

565

ST281

4174

120410

174

120807

2000

120837

2000

X 14

ALS4-1032-225

Purchased

No

270

Each

1,194.000

8

8

AI S4-1032-225

**

11121269 (x8) All 12/05/18

Insert

Location

Loc Qty

Loc Code

ST281

1031

108696

146

110768

62

118386

55

118966

68

120671

700

ST282

163

120410

150

120451

13

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Parent Item Name: Aft Tube Assembly

Start Date: 08/03/2012

Required Date: 22/03/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C4A Purchased No

270 Each 3,729.000 6 6

AN3C4A

BOLT

**

yl 126418

Location	Loc Qty	Loc Code
ST350	3729	
117688	5	
118112	16	
119749	10	
120187	2000	xl
120423	10	
120521	510	
120769	515	
120799	163	
120930	500	

AN3C5A Purchased No

270 Each 1,010.000 4 4

AN3C5A

Bolt

**

yl 126418

Location	Loc Qty	Loc Code
FP001	7	
115835	7	
ST350	1003	
116419	28	
117343	13	
117764	7	
117872	2	
119749	23	
120423	930	xl

AN960C10L NAS1149C0332 Purchased No

270 Each 0.0000 10 10

***AN960C10I ***

washer

**

11121255 x10 yl 126418

March-08-12 8:51:13 AM

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Page 4

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DART AEROSPACE LTD		Work Order:	81111
Description: Float Skidtube (412)		Part Number:	D3391-3
Inspection Dwg: D3391	Rev: H	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
14.000	+/-0.010	14.00	/		tape	mm/L-02
3.500	+/-0.010	3.500	/		vern	CNC-06
88.93	+/-0.030	88.93	/		tape	mm/L-02
Ø3.200	+/-0.010	3.201	/		vern	CNC-06
88.93	+/-0.030	88.93	/		tape	mm/L-02
Ø3.750	+/-0.010	3.750	/		vern	CNC-06
30° x 160" chamfer	+/-0.010	30° x 160"	/		II	

Measured by: mm/L	Date: 12/03/16
Audited by: BC	Date: 12/05/24

HAAS Section						
1.526	+0.000/-0.030	1.505	/		Caliper	BC 06
7.500	+/-0.010	7.502	/			"
27.750	+/-0.010	27.752	/		Tape	BC 09
31.750	+/-0.010	31.752	/			"
35.250	+/-0.010	35.252	/			"
3.300	+/-0.010	3.302	/			BC 06
0.200	+/-0.010	.195	/			
3.520	+/-0.010	3.522	/			
0.687	+0.010/-0.000	.687	/			
R0.062	+/-0.010	.062	/			
Ø0.484	+0.005/-0.001	.484	/			

Measured by: BC	Date: 12/03/24
Audited by: B-A	Date: 12/03/26

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-015/-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/JLM	
F	09.04.27	Dimensions updated per Rev H and NCR09-028	KJ/JLM	
G	09.11.16	Dimension 0.200 removed	KJ	
H	11.06.21	Dimension 44.995 removed	KJ	

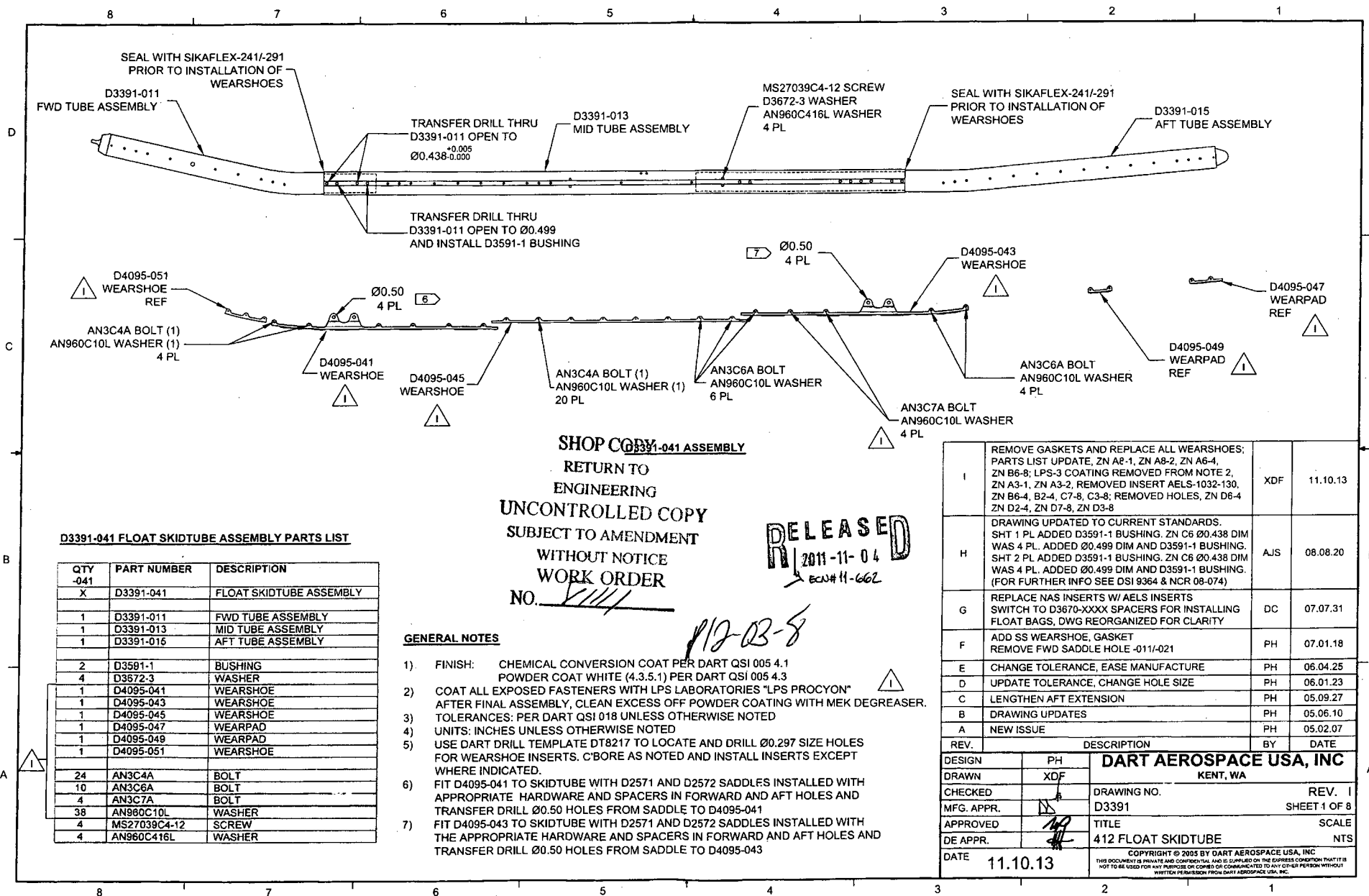
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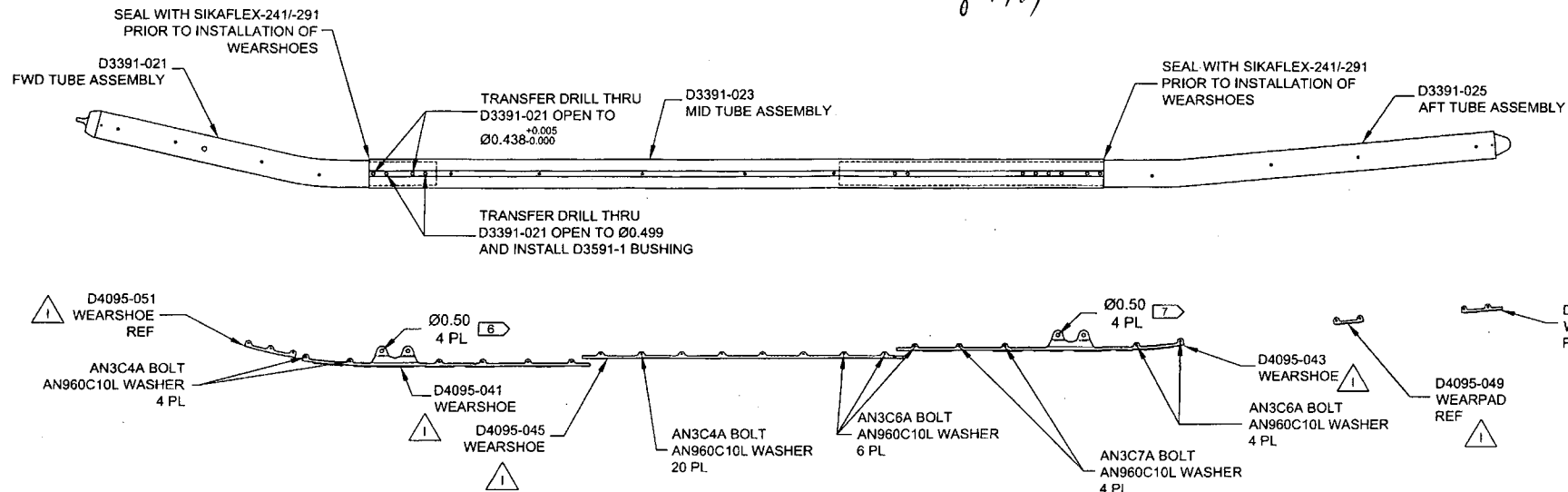
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NOTE: Date & initial all entries

81111



D3391-043 ASSEMBLY

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
2	D3591-1	BUSHING
1	D4095-041	WEARSHOE
1	D4095-043	WEARSHOE
1	D4095-045	WEARSHOE
1	D4095-047	WEARPAD
1	D4095-049	WEARPAD
1	D4095-051	WEARSHOE
24	AN3C4A	BOLT
10	AN3C6A	BOLT
4	AN3C7A	BOLT
38	AN960C10L	WASHER

GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.
- 6) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-041
- 7) FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-043

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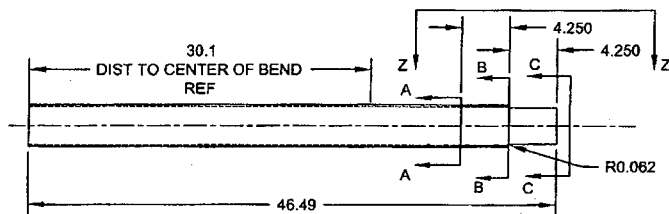
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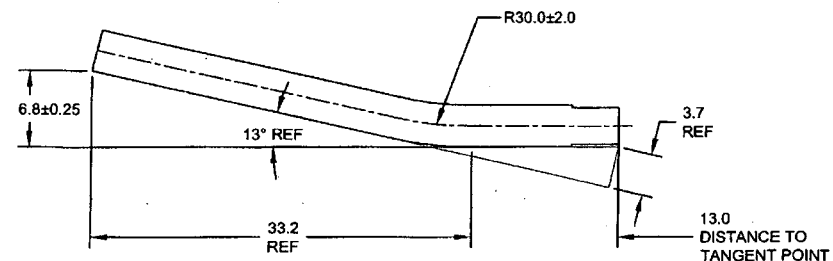
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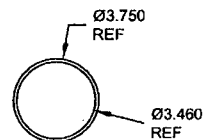
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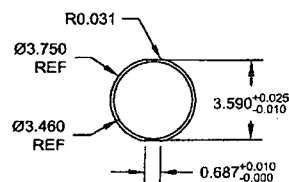
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



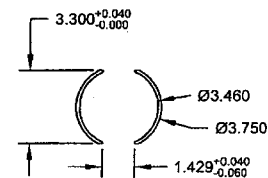
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



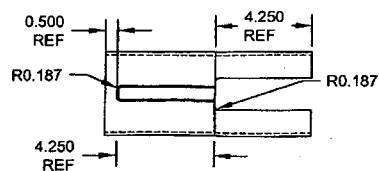
SECTION A-A
SCALE 2X



SECTION B-B
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SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

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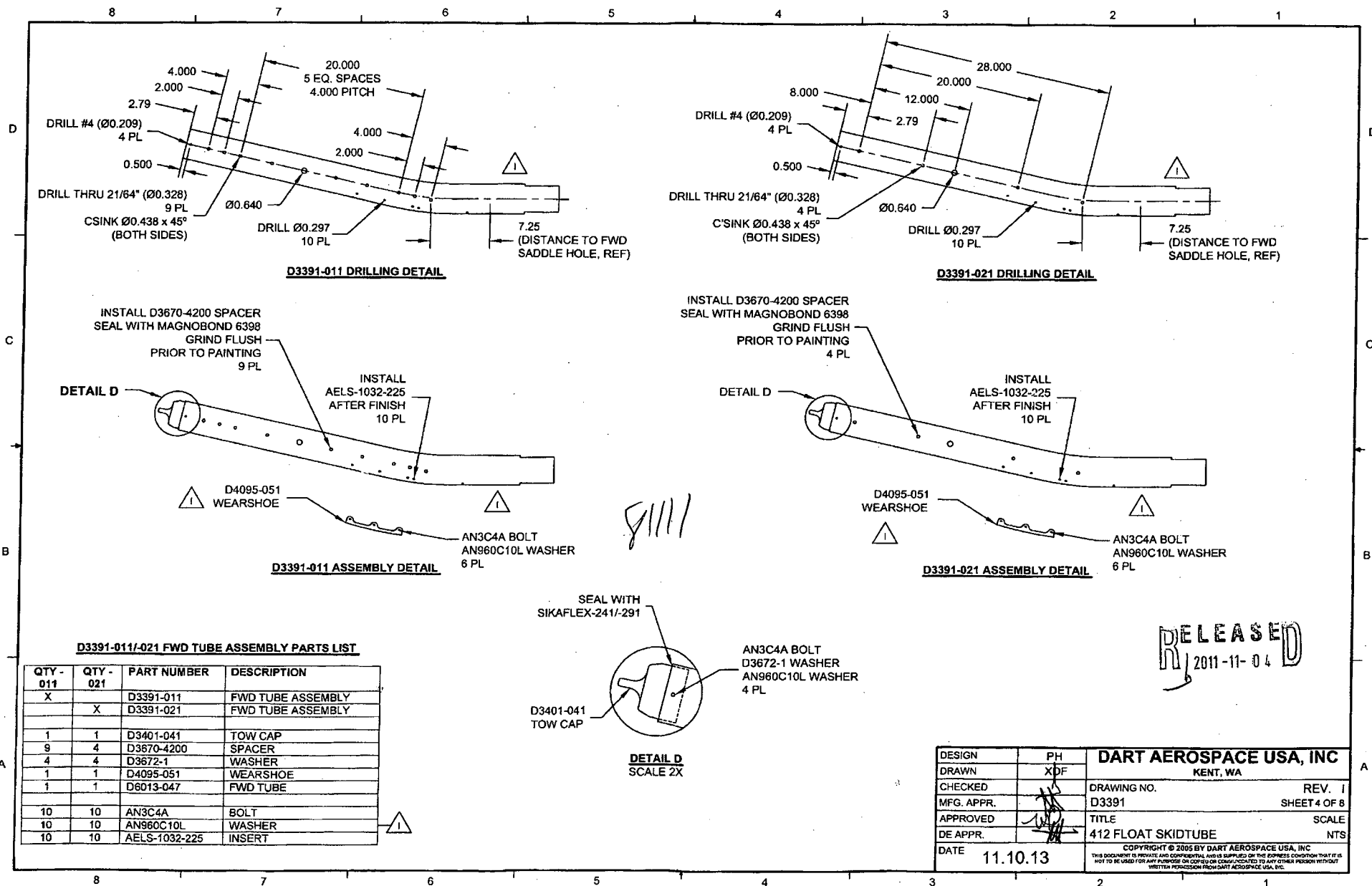
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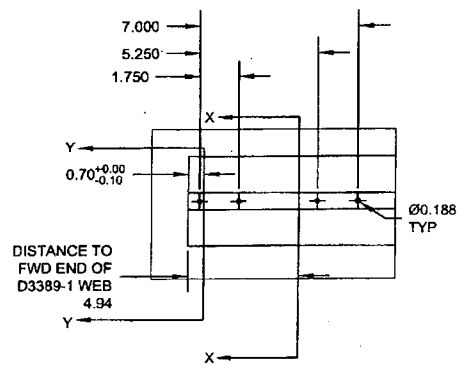
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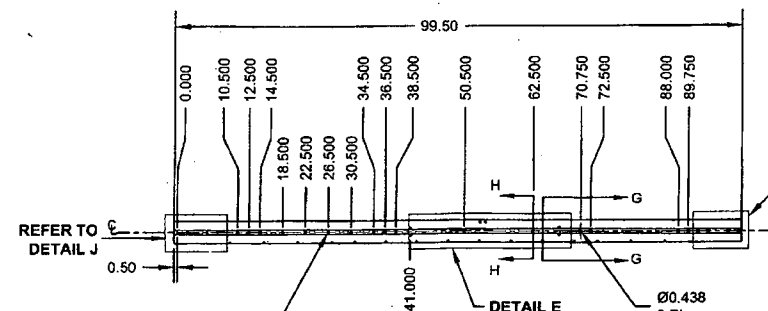
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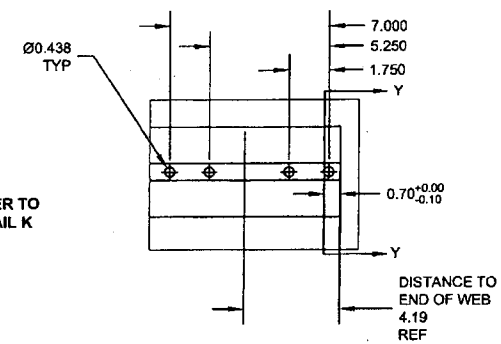
D
C
B
A



DETAIL J
SCALE 4X



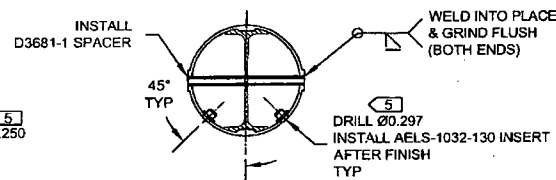
D3391-013 ASSEMBLY DETAIL



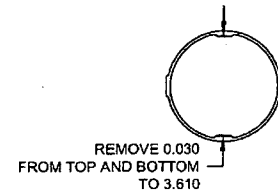
DETAIL K
SCALE 4X



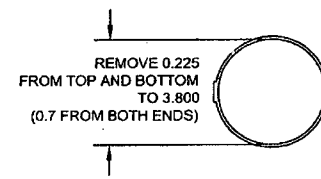
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



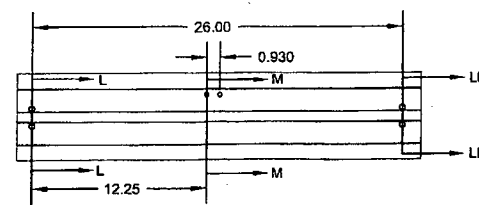
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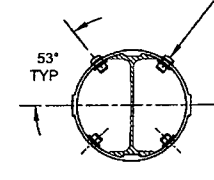
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SCALE 5X

D3391-013 MID TUBE ASSEMBLY PARTS LIST

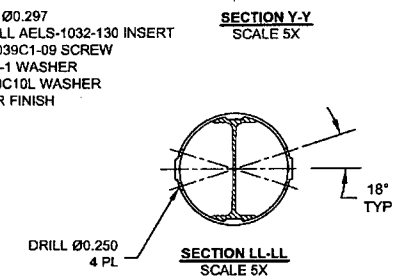
QTY	PART NUMBER	DESCRIPTION
-013		
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW



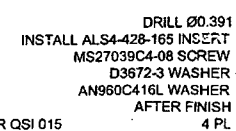
DETAIL E
SCALE NONE



SECTION M-M
SCALE 5X



SECTION LL-LL
SCALE 5X



SECTION L-L
SCALE 5X

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- D3391-013 MID TUBE ASSEMBLY**
- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
 - 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
 - 3) WELDING: PER DART QSI 004

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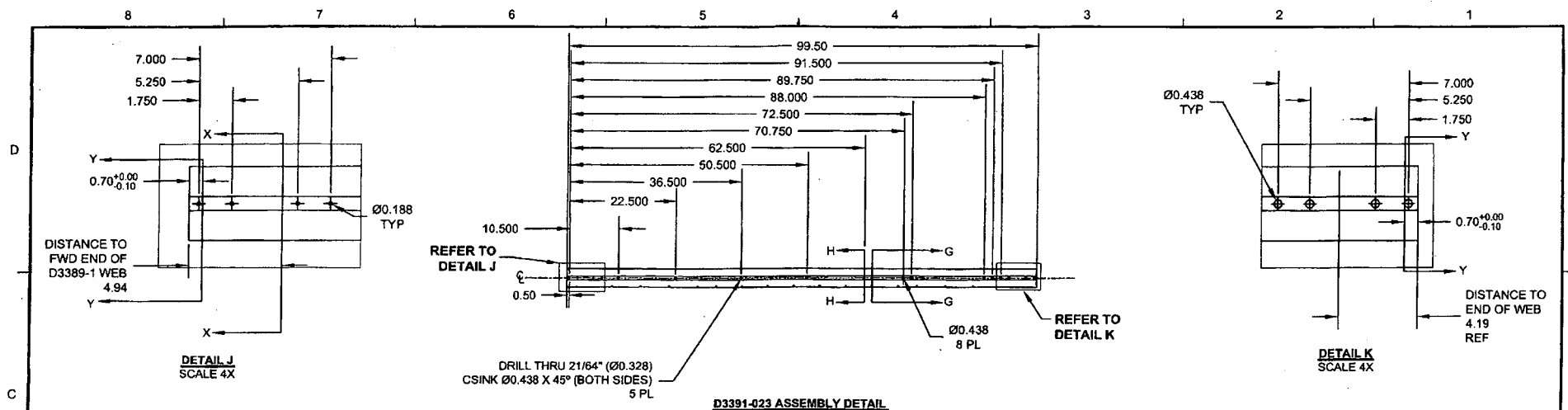
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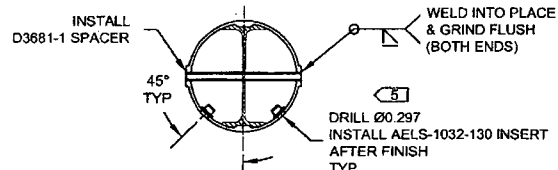
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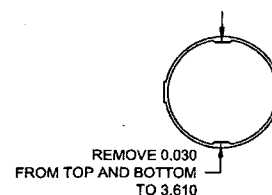
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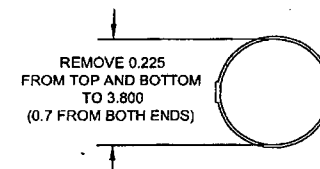
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

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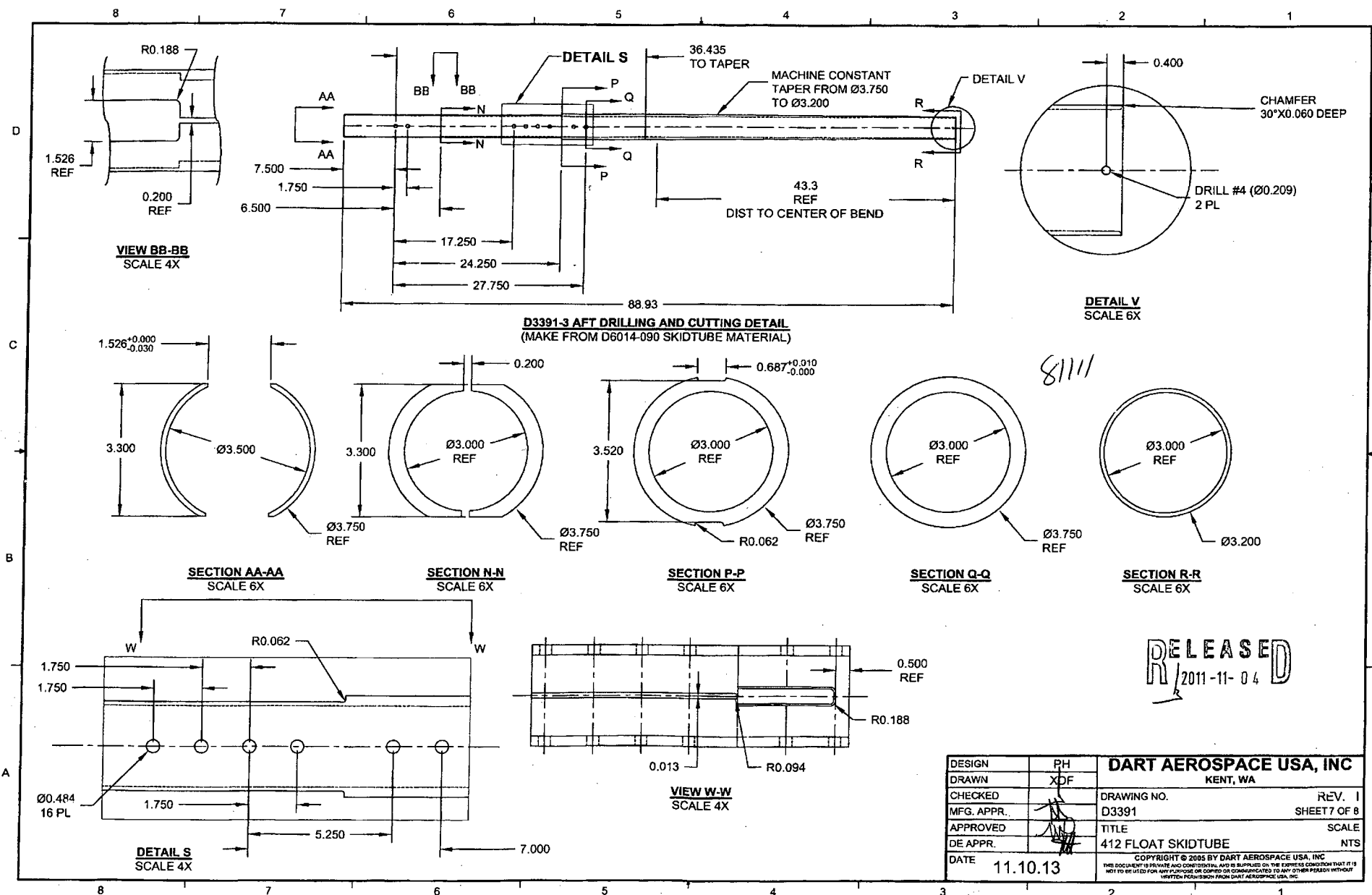
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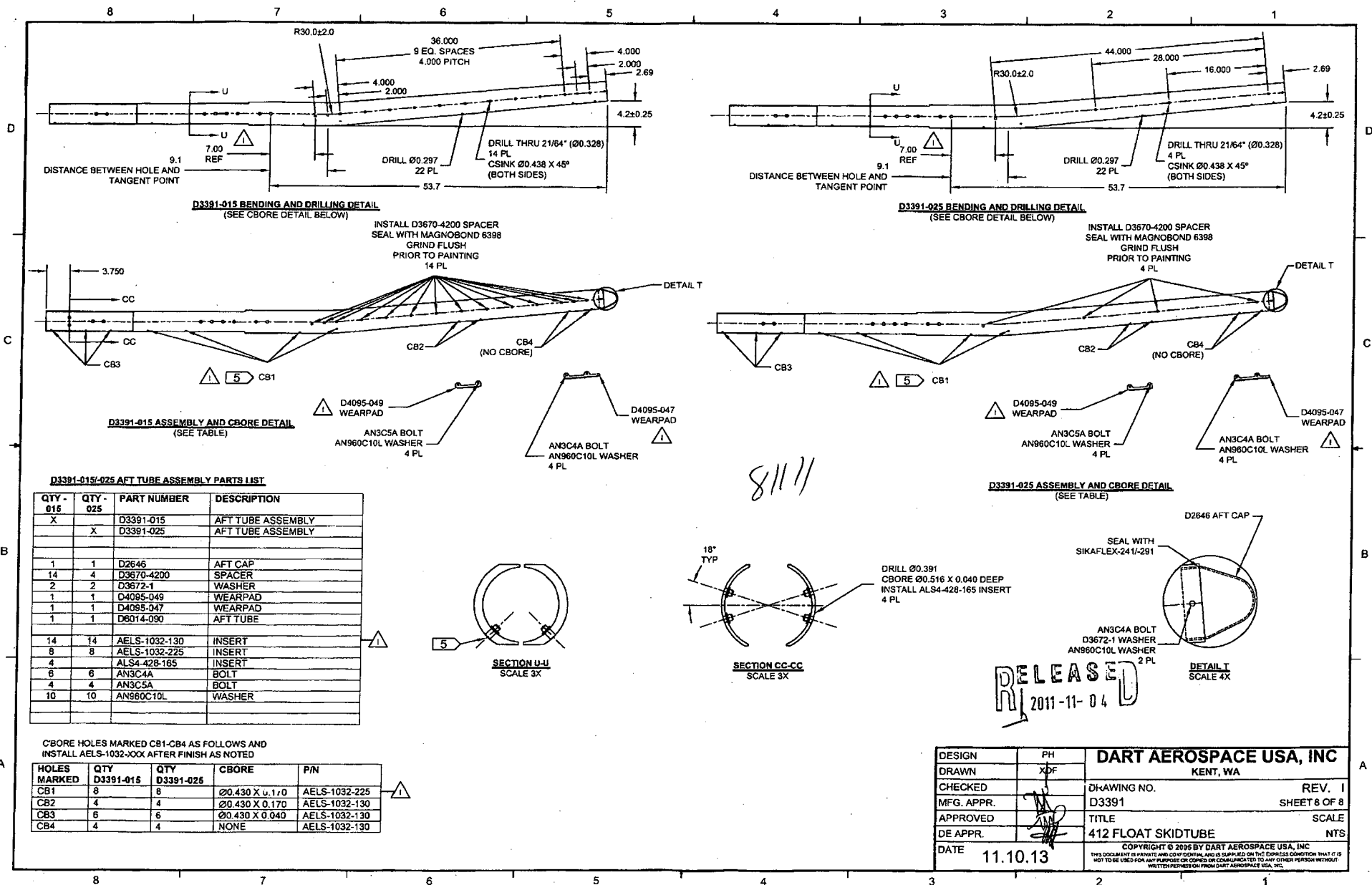
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